



Academy

California Academy of Sciences' Member Newsletter

August/September 1999

**The Steinhart
CELEBRATES
its 75th!**

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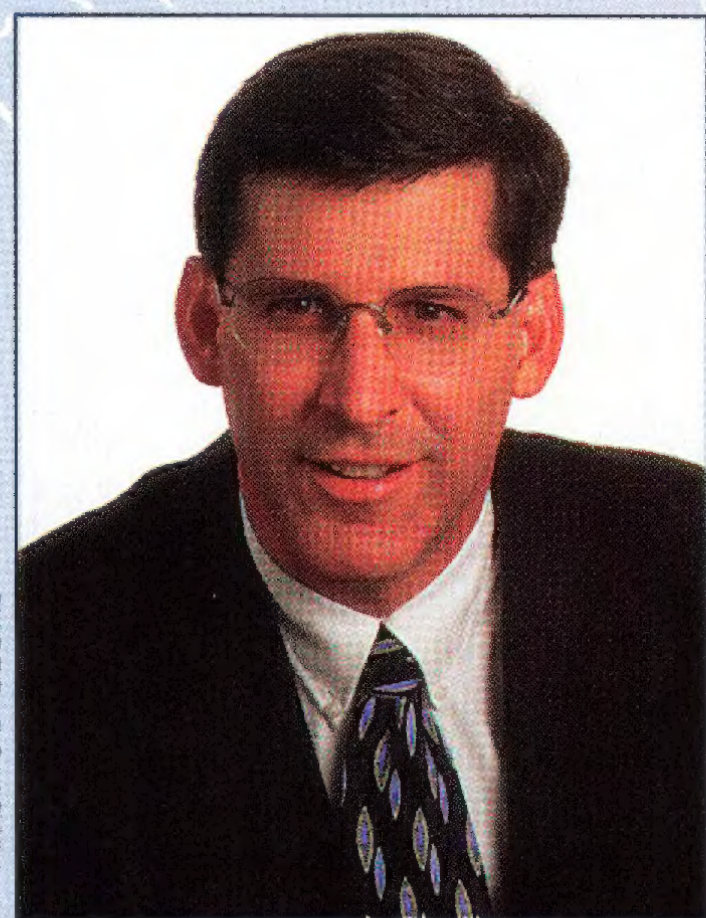
CHANGE SERVICE REQUESTED

To explore and explain the natural world

STEINHART AQUARIUM • MORRISON PLANETARIUM • NATURAL HISTORY MUSEUM

Executive Director's Message

There are several things going on at the Academy that I would like to share with you, each of which is important to this institution and significant to you, our members.



Dr. Patrick Kociolek

In late June, you may have seen some of the extensive press coverage given to a seahorse breeding program taking place

right here at the Academy. The objective of the project is to study the unusual reproductive behavior and techniques for the care and nutrition of young and adult seahorses (*Hippocampus ingens*) in captivity. This is an important effort because of its focus on restoring and replenishing the increasingly vulnerable population of Giant Pacific Seahorses. The results have been extremely positive: after only one year of breeding, four successive generations of thirty-eight seahorses, representing four different species, have been born at the Steinhart. The Giant Pacific Seahorse is one of the most difficult to breed, with an average of only 1% juvenile survival. But the survival rate at the Steinhart has reached an all time high of 30%. These beautiful creatures are on permanent display in the aquarium and I urge you to come in and observe the fascinating results for yourself.

Another piece of news I'm pleased to report involves Academy Ichthyologist Dr. William Eschmeyer. In late June, Eschmeyer received the 1999 Robert H. Gibbs, Jr. Memorial Award for his outstanding published works in systematic ichthyology at the American Society of Ichthyologists and Herpetologists' 79th annual meeting in Pennsylvania. This is a wonderful acknowledgement of Bill's work on the *Catalogue of Fishes*, and great news for the Academy since it certainly reflects positively on our scientific programs. Congratulations,

Cont. on pg.10

Party Steinhart Style In September

The 7,000 inhabitants of Steinhart Aquarium invite members to join them to celebrate 75 years of glorious living in their home, one of the oldest aquariums in the country. Since 1923, the fish, amphibians, and reptiles have captivated the attention of the public, amusing us with their sometimes playful behavior and mesmerizing us as they gracefully move through their aquatic domains. They have graciously allowed us to peer through their glass houses, inspiring us to learn more about them and their natural habitats. During the month of September, there are a variety of ways members can honor the residents of Steinhart Aquarium and reflect on the long and colorful history of the Steinhart Aquarium.

Beginning on September 18th and 19th, children in aquatic costumes will receive goodies from the membership desk. Penguin suits are not required, but adults are invited to join in the fun and games. Face painters will be on hand to draw your favorite fish commemorating the special occasion. Other anniversary highlights include two exciting events with John McCosker, author of *The History of Steinhart Aquarium: A Very Fishy Tale* (see page 6), a special members book signing and lecture on September 15th at 2 and 7:30 p.m., and a talk only for members' kids on September 18th at 9:30 a.m.



Steinhart Aquarium residents

Hispanic Heritage Month at the Academy

Beginning September 15 and continuing through October 15, the Academy of Sciences will celebrate Hispanic cultures, achievements, and heritage in honor of Hispanic Heritage Month.

The Academy will host a variety of events including music, dance, films, and special lectures. On Saturday, September 25, visitors to the Academy can enjoy two films from San Francisco's Cine Acción as part of the 1999 Latino Film Festival. For those interested in learning more about the Academy's exploration of the Archipelagos, Academy scientist Luis Baptista will give a talk entitled "Revillagigedo Archipelago: The Galapagos of the North." Academy members also will be offered a special lecture with Dr. Tom Gunderjan, an anthropologist from St. Mary's University on October 13. He will discuss new Mayan discoveries at the Blue Creek project in Belize.

During Hispanic Heritage Month, Academy members will be offered free admission to organizations committed to promoting awareness of the cultures and traditions of Latin countries through an exclusive reciprocal membership exchange. Participating organizations include Galeria De La Raza (415) 826-8009 and Cine Acción (415) 553-8135.

Coming Soon

Opens October 9, 1999



One Continent. Many Worlds.



TIME

Ford Motor Company

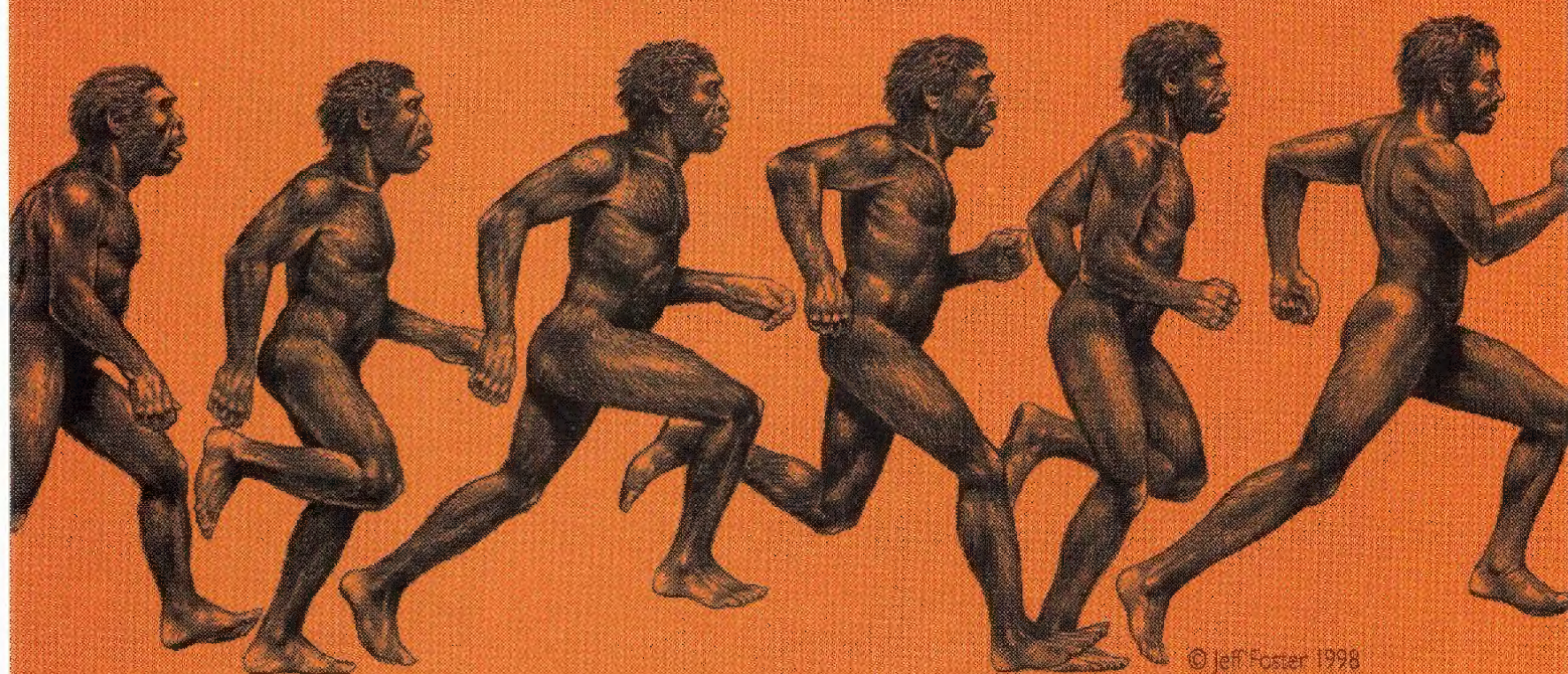
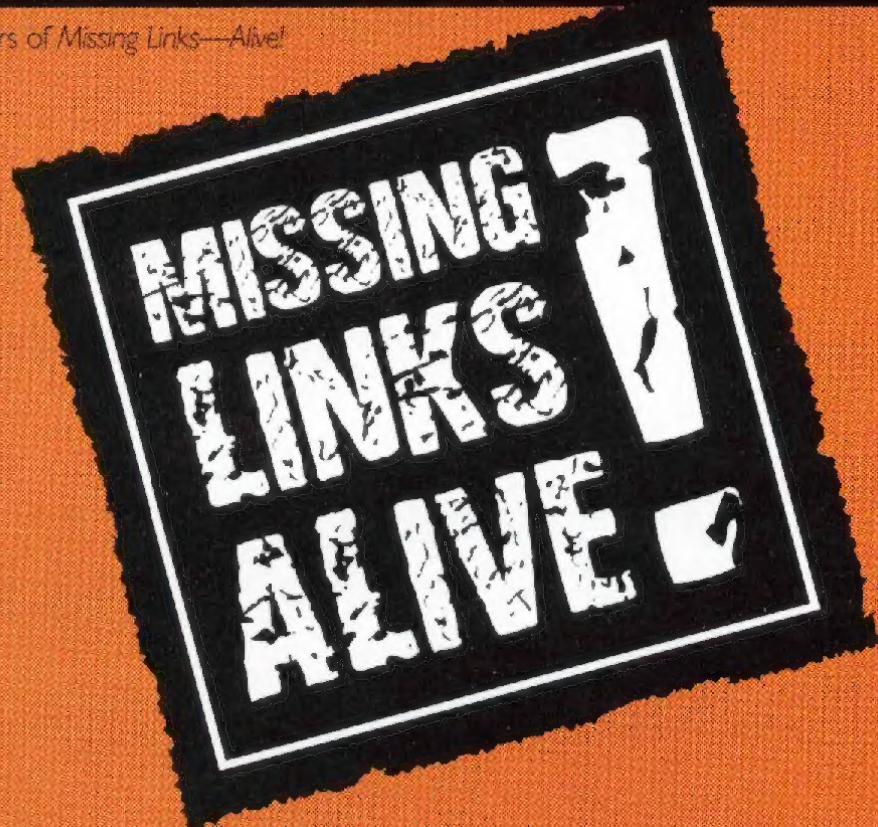
Made possible by Ford Motor Company and TIME Magazine.



Interact with your past.

Advanced Exhibits and United Exhibits Group are co-creators of *Missing Links—Alive!*

The most
comprehensive
exhibit about
human origins
ever created.



This exhibit sponsored in part by

WILSON CORNERSTONE

MAY 29 - SEPTEMBER 6

Special *Missing Links—Alive!* Programs

Get primitive at the Academy and experience human evolution through hands-on activities, demonstrations, and much more. The following presentations will take place in the *Missing Links—Alive!* exhibit, unless otherwise noted. Don't miss these exciting opportunities to help unravel the mysteries of our ancestors. For more information, call 415-750-7318.

Stone Age Clothing

Watch how animal hides are transformed into clothing using stone and bone tools. Also, see the manufacture of bone scrapers and stone blades.

August 29 (Sunday)

11:00 - 2:00 pm & 2:30 - 4:30 pm

Fire Masters

Witness the creation of fire the way it was made thousands of years ago. Only wood, weeds and rocks will be used in this demonstration.

August 3 (Tuesday), 2:00 - 2:30 pm

August 28 (Saturday), 3:00 - 3:30 pm

August 29 (Sunday), 2:00 - 2:30 pm

Cave Paintings

Enjoy a live demonstration of cave painting, and learn about the tools and pigments used to produce these magnificent murals.

August 14 (Saturday),

11:00 - 1:00 pm & 2:00 - 4:00 pm

August 18 (Wednesday)

11:00 - 1:00 pm & 2:00 - 4:00 pm

Twisting Plant Fibers

Watch different techniques to twist plant fibers and see how early humans might have used them in their daily activities.

August 21 (Saturday), 11:00 - 2:00 pm

August 22 (Sunday)

11:00 - 2:00 pm & 2:30 - 4:30 pm

Primitive Weapons

Discover how primitive tools can be used to create either beautiful ornaments or powerful weapons.

August 28 (Saturday)

11:00 - 2:00 pm & 2:30 - 4:30 pm

DIVE INTO

The History of Steinhart Aquarium: A Very Fishy Tale

The following is an excerpt from the preface of the newly published book, "The History of Steinhart Aquarium: A Very Fishy Tale" by John E. McCosker, to be released in September.

Since 1923, the Steinhart Aquarium has prided itself for being the fishiest place in San Francisco. At the Steinhart, there are more kinds of fish (and other aquatic creatures), more fish stories, and more people who like fish than anywhere else in this west coast fishing town. Because the Aquarium is a division of the California Academy of Sciences, a research and education organization that has explored and explained life on earth to millions of visitors since 1853, it is necessary that I be precise in my definition of "fishy." Webster defines fishy as "1. Consisting of fish; having the qualities, taste, or odor of fish; abounding in fish. 2. *Colloq.* Improbable." The Aquarium is both. It possesses examples of aquatic creatures from nearly all of the world's water and allows visitors an opportunity to observe these, the most successful group of living vertebrates. And it has possessed a staff of fish keepers, curators, crocodile wranglers, shark collectors, snake handlers and more, whose improbable but entirely reliable stories are worth recounting. Such as the first superintendent, who explored the South Pacific in search of cannibals and feathered-cloaks. Or the second superintendent, a science show host who had to wrestle a giant python off of his snake-bitten guest on live television. You'll also discover how we ended up with a Giant Pacific Octopus retrieved from the ladies' loo of a fancy San Francisco restaurant, how we discovered the source of the eerie Sausalito hum, and how we fitted contact lenses onto a struggling six foot shark. And midnight scuba dives in the Indian Ocean, with lights out at 200 feet under in search of coelacanths and flashlight fishes, or swimming with White Sharks, the "man-eating" star of *Jaws*, and the equally dangerous politicians of City Hall. And lots more.

The chapters of this book fit nicely into chronological segments which I have taken the liberty of rounding into quarter century bites. My two predecessors were at the helm

for 20 and 25 years, respectively, and my watch lasted for more than 21 years. The characters and conditions of some stories often span those boundaries, so don't be surprised to discover fish collectors or the creatures themselves from a past or future frame within a single discussion. Lacking any previous history of the Steinhart, you will discover that my

own tales are longer than those of my predecessors; a future aquarium historian will now have a level playing field. In preparing this work I have scoured the Academy archives and have attempted to interview as many living associates of the Aquarium as possible. Any errors that exist in the telling are my responsibility.

The Steinhart is the grande dame of the American aquariums. At age 75 She is nearly the oldest on the continent, and with the help and generosity of Her enthusiastic supporters

She will have more and fishier stories to tell and to be told

about Her in years to come.

If this sounds fishy to you, then read on.



PHOTO: COURTESY OF SPECIAL COLLECTIONS/CAS LIBRARY

Aquarium staff demonstrate "other duties as assigned" in 1966 by moving an alligator out of the swamp to receive medical care.



PHOTO: COURTESY OF SPECIAL COLLECTIONS/CAS LIBRARY

Wrestling a not-so-camera-shy python on the Academy's television show, "Science in Action." (Rear, left to right) Richard Cook, Benjamin Draper, Art Watson and Jimmy Payne (front) Dr. Earl Herald and Charles Shaw.

Millennium Madness

It was a mad, mad world at the Academy on the night of May 20 as over five hundred guests celebrated the 14th Annual Academy Ball, *Millennium Madness*. The Academy was transformed into a wonderland with the help of Alice, the Mad Hatter, Tweedle Dee and Tweedle Dum, and resplendent Brazilian dancers. Guests were treated to delicious hors d'oeuvres and dinner by Dan McCall, and danced the night away amid pink flamingos and giant balloons to raise \$350,000 for Academy research and education programs. Many thanks to Ball Chairs Paul and Marcia Wythes, Corporate Chair Michael J. Murray, and Sponsor Bank of America for a night of fun and fantasy!



PHOTO: WEBER SHIH

Maurice and Joann Knox share a whimsical moment with Wonderland folks at the Academy's *Millennium Madness* ball last May.



PHOTO: CHARLOTTE FORTO

A giant caterpillar gets his nose tweaked during the festivities of *Millennium Madness*.

Missing Links—Alive! Opening



PHOTO: WEBER SHIH

Drs. Patrick Kocielek and Nina Jablonski welcome Dr. Meave Leakey(r) to the opening of *Missing Links Alive!* on May 27, 1999. Dr. Leakey presented a lecture on human evolution to a sold-out Academy audience the following night.

Many thanks to the following members who have increased their support of the Academy and its Annual Fund in the last two months:

Dr. Jill Armbrust &
Mr. Jon Holtzman
Mr. & Mrs. Bruce Carswell
Dr. Elizabeth Charlson &
Mr. Michael Charlson
Mr. Charles T. Fischer
Mr. Joachim Hollstein
Ms. Mary Holstege &
Mr. Dan Ford
Mr. Alexander Imlay
Robert & B. Karen Jachens
Mr. Gordon Jones
Dr. & Mrs. Sanford Lazar
Brian & Kerry MacDonald
Marion McGovern
Mr. & Mrs. Charles McLeod, Jr.

Kurt & Suzanne Melchior
Carrie Lee Mohun &
John Dougherty
Ms. Julie Nash
Mr. John Nelson
Mrs. Russell D. Niles
Mrs. Phyllis Norris
Mr. & Mrs. Tom O'Connell
Dr. & Mrs. Michael Sanders
Dr. Elizabeth Settles
Mrs. Margaret Soares
Ronald Wong & Ira Ng
Mr. Edward A. Waugh
Mrs. Lisa Weston
Ms. Lynn Wright

August

The Skin and Bones of Human Evolution

with CAS Curator of Anthropology Nina Jablonski

When most people think of human evolution, they think of fossils. And it is true that discoveries of ancient human fossils in the last 30 years have helped to fill out the branches of the human family tree to a great extent. But some of the most interesting aspects of human evolution, including details of the external appearance, communication abilities, and the cultures of our ancestors, are not fossilized and must be reconstructed from other lines of evidence.

Skin, one of the most interesting parts of the “non-fossil record” of human evolution, will be explored in this lecture. The properties of human skin, especially its pigmentation and sweating abilities, have been critical to the success of our lineage since our inception. Dr. Jablonski will share details of her own research on the fascinating story of how special properties of human skin evolved.

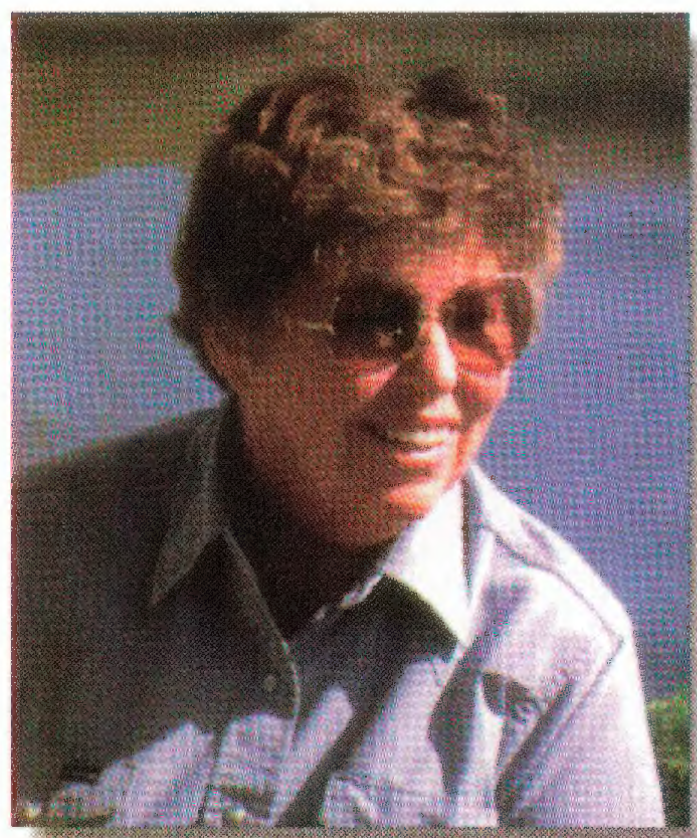
All this will be integrated with information on diet and distribution of our early ancestors to give a more holistic picture of what our ancestors looked like and how they behaved.

August 11, 2 & 7:30 pm, Morrison Auditorium

September

An Affair with Africa
Adventures Collecting Across a
Changing Continent

with Alzada Carlisle Kistner, author and explorer



Alzada Carlisle Kistner

In the summer of 1960, Alzada and her entomologist husband left their 18-month-old daughter in the care of relatives and began what was to be a four-month collecting expedition to the Belgian Congo. Three weeks after their arrival, the country was gripped by a revolution, trapping the Kistners in its midst.

In her upcoming presentation Alzada will cover her experiences with the life-threatening situations she encountered landing in the center of a revolution. She will also discuss five other expeditions to Africa and her encounters with large animals. Alzada will tell you about her hunching over columns of ants for hours on end while seven months pregnant, and eating dinner with Idi Amin.

Her lecture will provide you with a lively and humor-filled account of the human side of scientific expeditions.

Alzada will sign her book, *An Affair with Africa*, immediately following both lectures outside the auditorium.

September 8, 2 & 7:30 pm, Morrison Auditorium

The History of Steinhart Aquarium:
A Very Fishy Tale

with John McCosker, CAS Chair of Aquatic Biology

The Academy's Steinhart Aquarium is 75 years old this year and John McCosker, its Director from 1973-1994, is celebrating with the publication of *The History of Steinhart Aquarium: A Very Fishy Tale*.

In this slide-illustrated lecture, McCosker will describe the aquarium's founding and the forces that delayed its opening. He will discuss its first superintendent, who explored the South Pacific in search of cannibals and exotic fishes. Dr. Earl Herald, the next director, is remembered as a popular scientist who hosted the “Science in Action” television show. Hear Dr. McCosker's anecdotes about the octopus in the ladies room of a fancy San Francisco restaurant and the eerie Sausalito hum.

Dr. McCosker will be available following both lectures for a book-signing outside the auditorium.

September 15, 2 & 7:30 pm, Morrison Auditorium

To order an advance copy, please call (415)750-7216 or see the order form on page 14. Members' price, through September 15 is \$34.99 (regularly priced \$39.95).

Just for Members' Kids

As Director of Steinhart Aquarium for 21 years, Dr. McCosker has had many opportunities to study and display sharks. His slide-illustrated talk will include stories about the kinds of sharks in San Francisco, safety advice to swimmers and surfers, the shark attack in the Aquarium, research on sharks, and the story of Sandy, the famous great white shark who lived in the Roundabout.

September 18, 9:30 am only, Morrison Auditorium

Please note: Members' lectures are a benefit of your membership. Please present your membership card both at the front entrance and the auditorium. Your non-member guests are invited to attend, but please purchase them a ticket at the membership booth. Adult (non-member) and child tickets are \$10 and \$5 respectively.

Upcoming Members' Lecture

October 13 - New Mayan Discoveries at the
Blue Creek Project in Belize
with Tom Guderjan, Anthropologist

Members' Opening

Africa: One Continent. Many Worlds.

Members are cordially invited to preview this newest exhibit on Friday, October 8, 1999, from 5 to 8 PM. This special opening is free to all members. Light refreshments will be served.

The AFRICA exhibit represents a rich collaborative effort between African and African American scholars who have designed and narrated the stories of their own peoples. The exhibit will open new doors of understanding about African peoples and their cultures.

In Retrospect...

The history of the Academy's growth and explorations of the natural world contributes to a rich understanding of our past and can help to navigate our future.

As we approach a new millennium and a new era at the Academy, we thought you, our members, would enjoy traveling back through archival newsletters and minutes to glimpse events, anecdotes, and stories that have shaped the Academy as we know it today. Look for this column in upcoming newsletters to see where we've been.

100 Years Ago

September 18, 1899 – A 'Geological Section' of the Academy was formed, consisting of Professor Joseph LeConte, R.H. Loughridge, John C. Merriam, James Perrin Smith, and Andrew C. Lawson. Among the accessions to the museum, from Baja California, 100 insects, 1300 oligocheata, 66 lizards, and 405 shells, by Gustav Eisen. Mary Roberts Smith, assistant professor of sociology at Stanford University, lectured on 'The Responsibilities of Employers of Domestic Servants.'

50 Years Ago

September 1949 – Under a contract recently signed with the Office of Naval Research, the Academy will undertake a combined geological and biological investigation of the sea bottom off the central California coast. The objectives of the project are to determine the geological character of the continental shelf and of certain adjacent sea mounts which rise from considerable depths to the west of the continental shelf; to determine the occurrence and distribution of undersea life in relation to such factors as temperature, depth and character of the bottom; and to interpret the effect of bottom contours upon local currents and the upwelling of water from the ocean depths.

25 Years Ago

September 1974 – Something occurred on July 22 in Steinhart Aquarium so rare and unusual that it left knowledgeable fish folk scratching their heads and wondering if they could believe what they were witnessing. Here's what happened:

Though many kinds of sharks are known to be a natural enemy, the white-sided dolphins evidenced something new

in behavior when they tried desperately to keep life going in a badly bruised young thresher shark placed in their tank. The shark, extremely rare, had been netted by the Sunbeam Bait Company when fishing for anchovies. They put in a call to the aquarium and the shark was quickly collected and

brought to the Academy. It suffered from net burns as well as shock and was scarcely alive when put into the tank.

A shark, to be kept alive, must be kept moving. The two female dolphins immediately became maternal and tried to help it by moving it upward from the bottom of the tank, doing it either by using their dorsal fins or gingerly trying to pick it up with their toothy jaws in order to get it in motion. Even when Senior Aquarist William Rohrs was in the tank trying to help, the dolphins still circled and "got into the act" as they could. The dolphin action was much the same as the "midwife behavior" evidenced when the pups are born - nudging them

and gently shoving them around to get all systems "go." It was quite a scene to witness - dolphin and shark - natural enemies - one trying to aid and abet the other. Unfortunately, the shark didn't quite make it and was dead by evening.

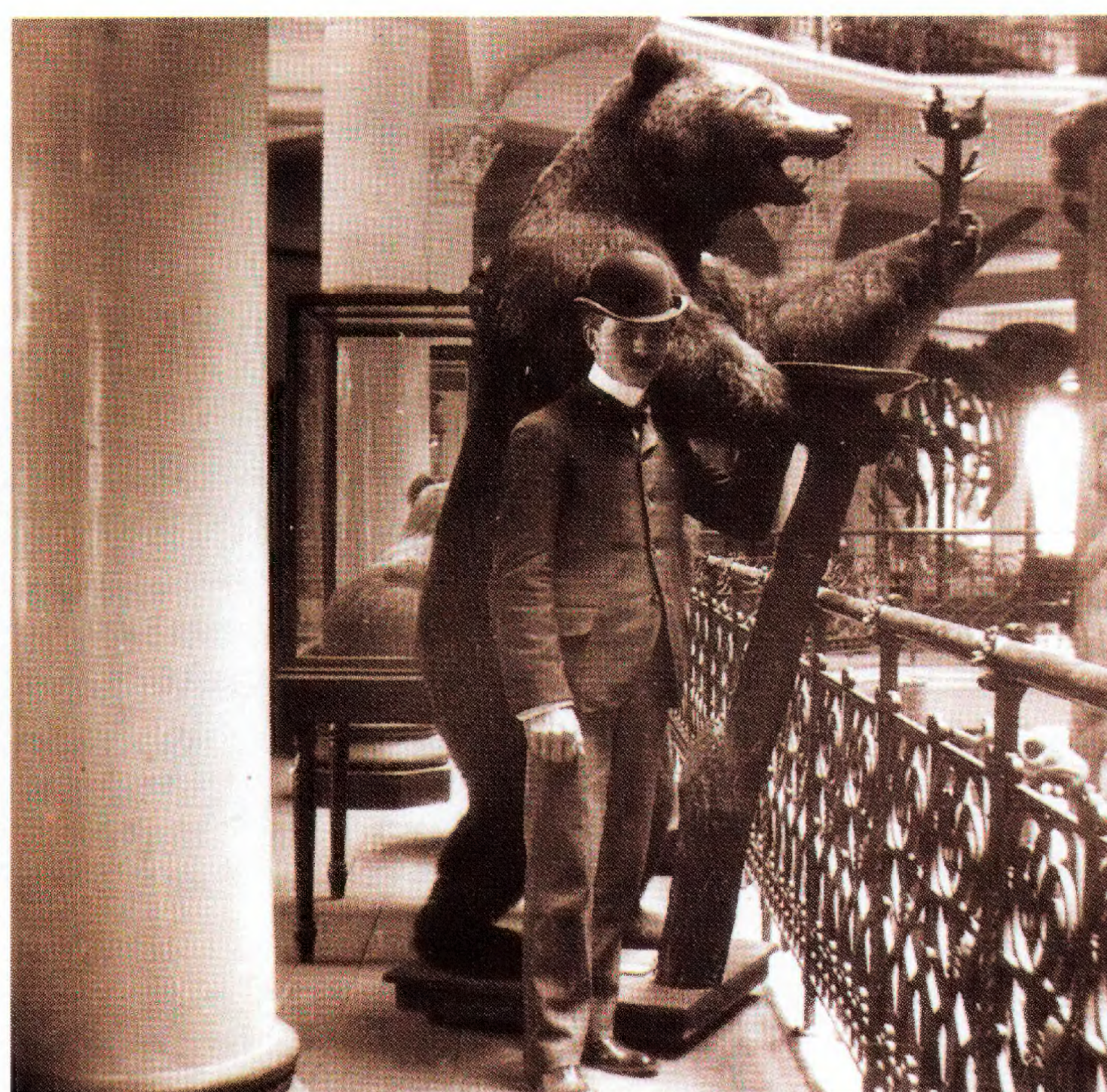


PHOTO: COURTESY OF SPECIAL COLLECTIONS/CAS LIBRARY

A visitor befriends one of the unique pieces on display in the light-filled atrium of the Academy that was located at 833 Market Street in San Francisco from 1891 until 1906.



PHOTO: COURTESY OF SPECIAL COLLECTIONS/CAS LIBRARY

Dr. G D. Hanna, curator of geology (left); Dr. W. Follett, curator of fishes, and Dr. Robert C. Miller, academy director, examine lyre crab and a tray of whelks from one of their drags of the ocean floor.

Adult Education

Limantour Natural Area

Field Trip

Join Dan Murphy on our fourth excursion to the coast chaparral, riparian woodland, and marsh habitats of the Limantour Natural Area at Point Reyes National Seashore. Highlights of last year's trip were a male Summer Tanager, a Great Horned Owl, and about 40 other species. Murphy discusses the impact of the 1995 fire on the habitat and resident birds, and their ongoing recovery.

Dan Murphy
August 28 (Saturday)
9:00 am - 2:00 pm
\$25 members/\$30 non-members

California's Complex Composites

Lectures and Field Trip

The composite, or sunflower, family, Asteraceae, is among the world's largest plant families, with over 20,000 species. It is



Sunflower, *Helianthus annuus*

also the largest, most ubiquitous family in California's flora, and includes some of the most difficult plants to identify. While it might seem as though the majority of composites are yellow daisies, there are actually key differences among the many species in this family that are easy to see when you know what to look for.

Lectures review the basics of the

family, taxonomy and identification. Then on field trips, see a wide variety of composites in their natural settings.

Glenn Keator
Lectures: September 8, 22, 29 (3 Wednesdays)
7:00 pm - 9:00 pm
Field trips: September 19 and 26
\$75 members/\$85 non-members

Biological Illustration

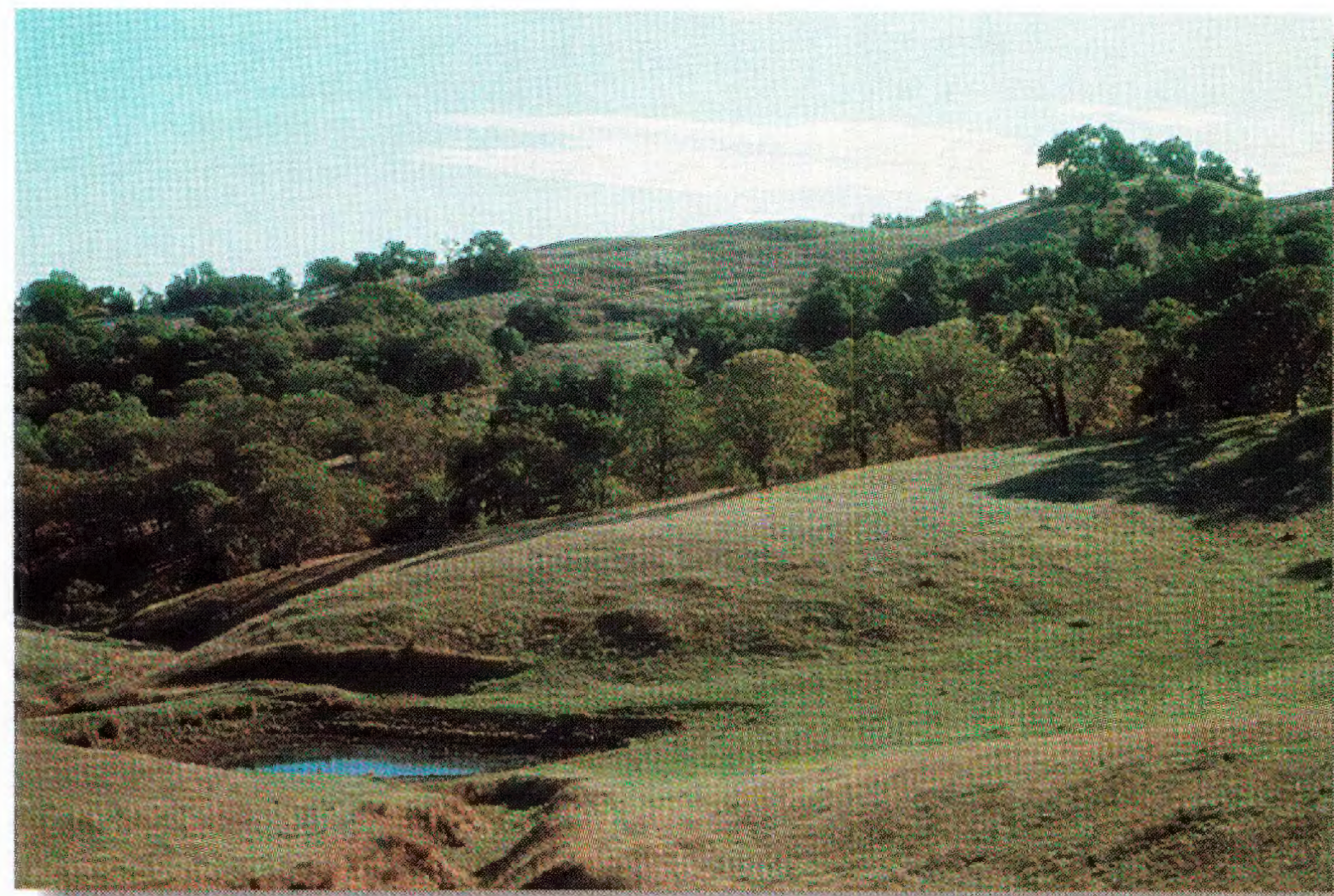
Stressing observation, accuracy, and craft, students at any level learn the basics and conventions of drawing natural

forms in black and white. Editorial requirements for publications will be detailed. Techniques to be explored include shaded pencil, ink (both stipple and line), coquille and scratchboard, and shading film.

Charles Stasek
August 8, 15, 22 (3 Sundays)
9:30 am - 4:30 pm
\$115 members/\$125 non-members

Family Hike at Pepperwood

Field Trip



Pepperwood Ranch

Bring the children to Pepperwood Ranch for a discovery walk with beautiful mountain views, rolling grassy hills, shady woodlands, and soaring hawks. Search for tree frogs, turtles, and salamanders at the pond and discuss what lives in a meadow and along the forest edge. Picnic together amid the hum of insects and the song of meadowlarks. Open to families with children four to six years old.

Ginger Parish
September 18 (Saturday)
10:30 am - 1:30 pm
\$20 adults/\$15 children, members
\$25 adults/\$20 children, non-members

Hopi Kachinas

Lecture and Behind-the-Scenes Tour

Spirit. Masked dancer. Doll. Kachinas are all of these and serve as unique ambassadors of Hopi identity. During a behind-the-scenes tour of the Kachinas in the Academy's collection, see how their faces tell of the past, speak for the present, and serve as role models for the future. Examine Kachina construction, style changes through time, and classification, as well as the transformation of their forms, functions, and symbolic associations.

Carol Morrison
September 16, 23, 30 (3 Thursdays)
7:00 - 9:00 pm
\$35 members/\$45 non-members

Sea Otters and Kelp Beds

Field Trip

Spend a day kayaking off Santa Cruz, in the Monterey Bay National Marine Sanctuary. Learn some paddling skills, observe wildlife, and enjoy a tour through the amazing kelp beds. Anchor in the kelp, looking for some of the many Sea Otters that live off Lighthouse Point. Observe California Sea Lions, Harbor Seals, and a variety of marine birds. Pull ashore through the low surf to each lunch on the beach!

Greg Meyer

September 5 or 6 (Sunday or Monday)

9:00 am - 2:30 pm

\$105 members/\$115 non-members

Wattis Symposium

Long Before the Mayflower — "The First Americans"

Featured Topic of the Academy's Fourth

Wattis Symposium in Anthropology



How and when did the first humans reach the New World? It is a surprise to many people that humans are relatively new inhabitants of our Hemisphere, having reached the Americas late

in the last Ice Age or Pleistocene Epoch. Debate over the peopling of the Americas has been intense for decades, with little consensus as to when and how people arrived in the New World, and who the people were. Until recently, this controversy was evaluated only on the basis of the evidence of human artifacts and bones. Now, new evidence from archaeology and physical anthropology, as well as from the fields of linguistics, paleoecology and molecular anthropology, has been brought to bear on this exciting and controversial topic. Who were the first Americans? Did these people all come by land or some by sea? Was there more than one wave of immigration? What environmental conditions influenced the nature and timing of human migrations? Who was Kennewick Man? Did all the migrating groups give rise to living populations in North and South America? These and many more questions will be addressed at the Academy's Fourth Wattis Symposium in Anthropology, "The First Americans: The Pleistocene Colonization of the New World." Ten distinguished speakers will present lectures during the symposium, including famed archaeologists Drs. Thomas Dillehay, Anna Roosevelt, Dennis Stanford, David Meltzer and Jon Erlandson, linguist Dr. Johanna Nichols, physical anthropologists Drs. Gentry Steele and Christy Turner, molecular anthropologist Dr. Andrew Merriwether, and paleoecologist Dr. Scott Elias. The symposium will commence at 9:00 am. It will be followed in the late afternoon by a reception at which light refreshments will be served. To order tickets, please use the form in this issue of the Newsletter.

October 2 (Saturday)

9 am - 6 pm

\$40 members/\$50 non-members/\$20 students

*The California Academy of Sciences and
the L.S.B. Leakey Foundation Present*

Missing Links—Alive! Lectures Series

Changing Views of Human Evolution

by Adrienne Zihlman

Human paleontology is a dynamic area of study in which new and often surprising discoveries challenge our thinking. The fossil record of the human past offers essential clues about the biology and anatomy of our ancestors. However, information from molecular biology, ecology, and geology, and the application of computer technology has at times compelled a re-evaluation of the fossil record. Zihlman describes how new information has shaken and altered ideas about human origins and evolution.

August 5 (Thursday)

2.5 Million Years of Human Evolution

by Dr. Alan Walker

Walker reviews the evidence that the genus *Homo* arose about two and a half million years ago from an *Australopithecus* ancestor, around the time the first stone tools appeared. Walker describes some of *Homo*'s critical adaptations, and how they differed from those of *Australopithecus*. Find out how the Nariokotome in Kenya gives a particularly full picture of this type of early hominid.

August 19 (Thursday)

7:00 pm in Morrison Auditorium

\$6 Academy/Leakey Foundation Members

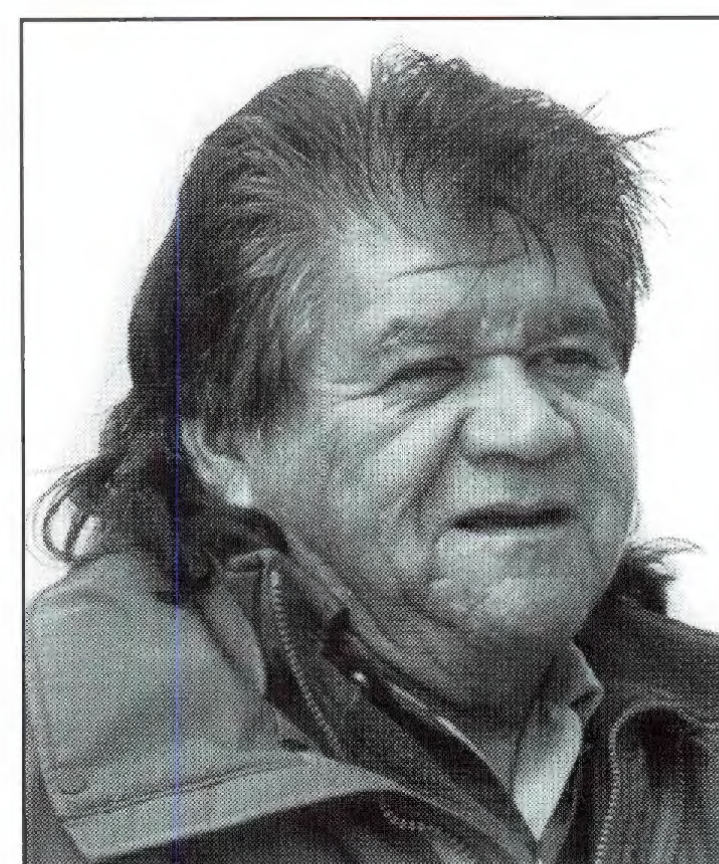
\$10 Non-Members

Please call 415/750-7097 for ticket information.

Benjamin Dean Lectures

Envisioning the Solar System

by Lanny Pinola



Lanny Pinola

As a park ranger at the Point Reyes National Seashore, Lanny Pinola is comfortable gazing into the wide open expanses of the night time sky. But he is willing to confine his imaginings to the planetarium sky for one evening, to share with Academy families the oral legacy of his ancestors. Lanny is the Community Tribal Elder of the Kashia Pomo/Miwok

Tribes in the Western Region north of San Francisco. He is keeping alive the wisdom and insights of those before him

through the retelling of their stories and traditions. Lanny will concentrate on visions of the heavens, tales of the planets, sun and moon and the spiritual life of the night for our enlightenment and enjoyment.

August 3

Forum for Emerging Theories

The progress of science is not linear. Many divergent theories are presented and varied lines of investigation pursued in the quest for a fuller understanding of the universe. But along the path of scientific inquiry, those suggesting the more controversial ideas sometimes find the conventional avenues of research inaccessible. The Fall 1999 Benjamin Dean Lecture Series will be a forum for emerging theories with some insights into the process of contemporary astronomical research.

Living at Ground Zero: Asteroid and Comet Impacts on the Earth and Mars

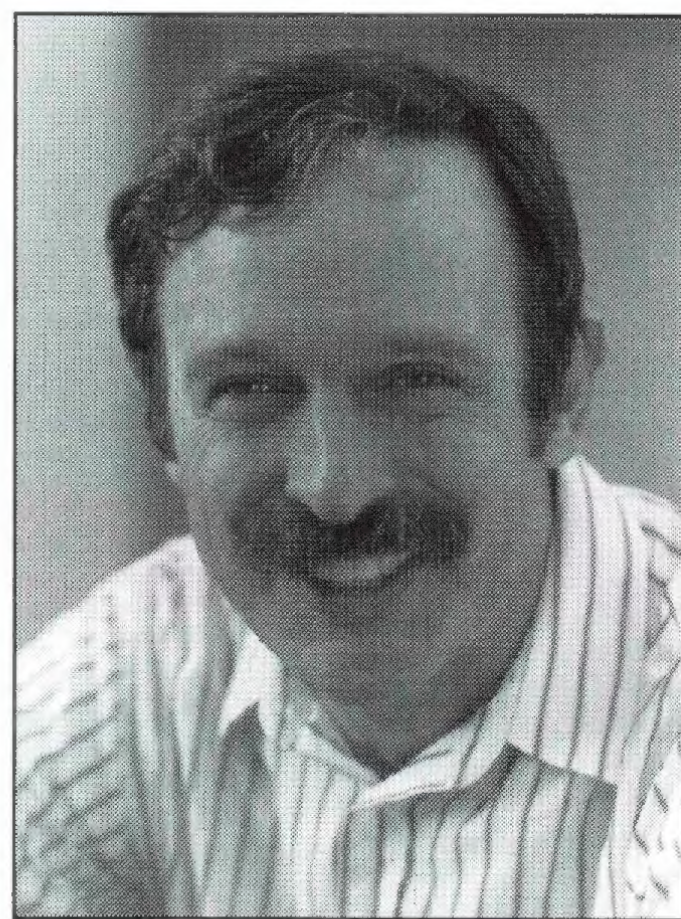
by Dr. Norman Sleep

The question of the origin of life on Earth is vigorously debated. However, Dr. Norman Sleep, professor of geophysics at Stanford University, distinguishes between the conditions for origins of life from conditions for the survival of life. The implication is that while life may have arisen on both the early Earth and early Mars, Mars may have been a somewhat safer place for the development of life.

Impacts of large asteroids and comets may have repeatedly, partially or completely, sterilized the Earth. Typically tens of millions of years passed between such dangerous impacts, enough time for life to evolve and colonize the planet. But after a major collision, only high temperature organisms were left as the global killing mechanism of large impacts is heat. The safest places during impacts on Earth were pore waters a kilometer or more deep in the subsurface.

Mars is a smaller target than Earth, and was hit less often. The Martian habitable subsurface extends to greater depths than Earth's. Assuming life developed on the planet Mars, it may have been better protected than terrestrial life. Such organisms may have been within rocks ejected by impacts, allowing for a transfer between Mars and Earth. Indeed, the tree of terrestrial life shows the expected effects of partially sterilizing impacts and hints of the expected effects of interplanetary exchange. Are our roots Martian?

September 14



Dr. Norman Sleep

Fall 1999 Benjamin Dean Lectures in the Morrison Planetarium, Tuesdays at 7:30 PM, \$3.00 each.

Information Hotline (415) 750-7141

October 26, 1999

Dr. Brian Greene "The Elegant Universe"

November 23, 1999

Dr. Edward Colbert "A Black Hole Adventure"

December 14, 1999

Dr. Halton Arp "Redshifts as the Key to a New Cosmology"

January 25, 2000

Dr. Louis Frank "Small Comets and Our Origins: The Ecstasy and the Agony of the Scientific Debate"

Director, cont. from pg 2

Bill,

Finally, I'd like to update you on some news on San Francisco's political front.

As you well recall, the Academy was poised and ready to pursue a bond measure for the fall of 1998. However, in the interest of the need to rebuild Laguna Honda hospital, the Academy withdrew its proposed bond measure. This fall, however, a bond measure for Laguna Honda will be on the ballot and so it is time, once again, for the Academy to consider a bond measure, possibly in March of 2000. I am sharing this with you now because the decision to go for a bond measure is an involved one and as we explore whether it is feasible and prudent to move forward at this time, I want to make certain you, our members, are kept informed.

The condition in which the Academy finds itself today is a little worse than it was a year ago when we first considered going for a bond. Our 30 year old roofs sustained yet another rainy winter. Our buildings are still feeling the effects of the Loma Prieta earthquake of 1989 and disabled access issues still need to be addressed. All in all, our need is more real than ever. The time could be right for the Academy to appeal to the voters of San Francisco to assist in the upkeep of its city-owned buildings. If we can pass a bond to ensure the safety of, and access to, the Academy, the trustees of this institution would commit to raising money to upgrade our exhibits, education programs and research enterprise. Our nearly year-long planning process is developing exciting approaches to improve all of these areas.

As you can see, there are always interesting things going on at the Academy. I'll keep you posted on the bond measure and as always, thank you for your continued interest in, and support for, the California Academy of Sciences.

Traditional Arts of the World

All programs take place at 1 pm in the Morrison Auditorium on select Saturdays. Presentations are free after general admission to the museum. For further information on these events and other Traditional Arts Programs, contact June Anderson at (415) 750-7164. The Traditional Arts Program is funded by the Paul L. and Phyllis Wattis Foundation.

August

August 7 – Bee-Keeping

Helene and Spencer Marshall from Marshall Farm, a San Francisco Bay Area Honey Company, will discuss how to raise bees and produce honey. The program ends with samplings of local varieties of wildflower honey.

August 14 – Norwegian Rosemaling

Marley Wright Smith shows us the decorative art of *rosemaling* (rose painting). Appearing mostly in the rural areas of Norway, the rustic floral painting decorates furniture, utensils, walls, ceilings, and the exposed interior structures of Norwegian homes.

August 21 – The History and Practice of Archery

Zach Ma will explain the history of archery, commenting upon the different types of bows and demonstrating the techniques of this martial art with a target.

August 28 – Wine Making

Jay Conner, of Great Fermentations, will talk about the ancient art of wine making. He will cover information on extracting flavors, colors and aromas in the process, transmuting the sugars into alcohol and how to guard the results. The demonstration will include treading of grapes, tasting of the juice and testing for sugar and acid content. (Courtyard)

September

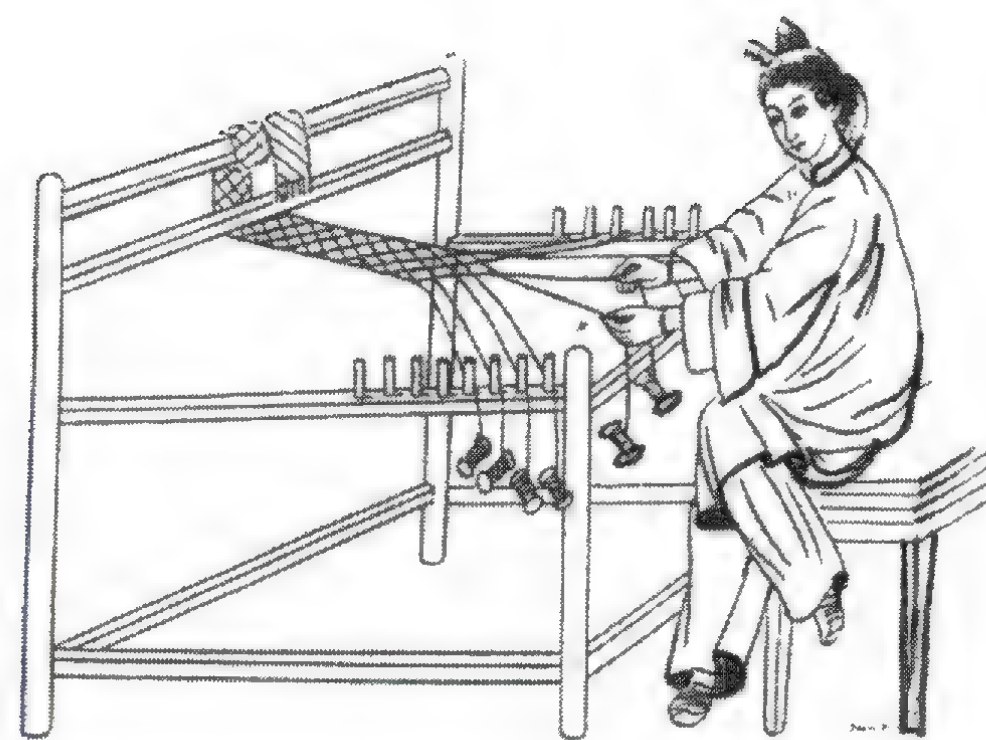
September 11– Harps, Songs and Stories of the Middle Ages

Nancy Thym-Hochrein will share her knowledge of music from the Middle Ages and play a few instruments from her large collection of harps, including the Romanesque harp, the Scottish harp with brass strings, and the Bray or “Gothic” harp, among others.

September 18 – Special Program: Japanese Braiding

Visiting the Academy from Oxford, England, textile artist Rodrick Owen focuses on different methods of braiding, with special emphasis on the *kumi bimo* technique on a *takadai* loom – skills he learned from master artists in Japan.

11 am to Noon



Scottish Fiddle Music

The San Francisco Scottish Fiddle Club, formed in 1986, will perform a repertoire of traditional airs and rollicking Shetland reels, as well as Highland and Cape Breton jigs and strathspeys. The fiddles will be accompanied by guitars, cellos, flutes, basses and bodhran (Irish hand-drum).

September 25 – Latin Cinema

As part of Hispanic Heritage Month, and in conjunction with the annual film festival of San Francisco's *Cine Accion*, the Anthropology Department is proud to host an afternoon of Latin cinema between the hours of 1 and 3 PM. (Auditorium)

Public Programs

Musical Conversations at the Academy

The Stern Grove Festival and the Academy are pairing up to present to you a special cultural experience. Performances are free for all to enjoy and are geared for family audiences.

Tales of the Ashanti

with Jim Gamble Puppet Productions

Before a great piece of golden Kente cloth, life-size puppets unfold African parables that not only amuse but enlighten while exploring the rich cultural heritage of the Ashanti of West Africa. Two folk tales are played out with the characteristic artwork of this famed Gold Coast tribe. Traditional African story-telling methods are employed to accurately bring forth the magic of these stories.

Wednesday, August 4, 11:30 am and 1:30 pm, Auditorium



“Talk - Asante Folktales”



Nancy Thym-Hochrein

Sky Shows

Tales of the Twilight

ending date: 12/5/99

Why are certain constellations considered more important than others? What's the mythology behind these star patterns? What star-stories are told in different parts of the world? Explore the workings of the sky and the way various cultures viewed the heavens down through the ages!

The Other Side of the Sky

ending date: 9/26/99

How do the Hubble Space Telescope, and giant radio dishes and raindrops help us uncover the wonders of modern astronomy? Noted Bay Area astronomers describe in their own words what excites them about their work and how they try to unlock the secrets of the Universe.

Neighbors in Space

no ending date

In this family show, the cosmic cartoon critter Moon Mouse leads an exploration of the Sun, Moon, and the planets of the solar system. Neighbors in Space is offered in the morning for the convenience of Members with younger children.

The Sky Tonight

no ending date

A relaxing tour of the current night sky, focusing on constellations, visible planets, the phase of the Moon, and upcoming celestial events visible with the naked eye. It's our most free-form show, where the sky is the main effect.

Docent Training Announced

Docents at the Academy have a unique opportunity to explore the natural world under the guidance of eminent scientists, to share that knowledge with visitors and to meet other people with similar interests, while also playing a vital role in helping the Academy advance its mission to explore and explain the natural world.

The Diversity of Life — a foundation course for docents — will examine what is meant by biodiversity, why it is important, why it is threatened, and what is being done to conserve it. The course will prepare docents to give guided tours throughout the Academy, interpreting the displays from the viewpoint of biodiversity and the Academy's mission. It will meet on Mondays from 9:00 a.m. to noon, Oct. 18, 1999 – Jan. 10, 2000 and will be repeated as a night class on Mondays from 6:00 to 9:00 p.m., Feb. 7, 2000 – May 8, 2000. Tuition will be \$40.00, with some scholarships available.

For further information or a volunteer application, please call (415) 750-7154.

August – September Sky Show Schedule

Sky Show	Weekdays	Weekends
August 1-September 6		
Neighbors in Space	11am	11am
Tales of the Twilight	2pm	12 & 2pm
The Other Side of the Sky	12:30pm	1 & 4pm
The Sky Tonight	3:30pm	3pm
September 6-September 12		
Neighbors in Space		11am
Tales of the Twilight	2pm	12 & 2pm
The Other Side of the Sky		1 & 4pm
The Sky Tonight		3pm
Note: Weekend schedule applies Monday, September 6.		
September 13-30		
The Sky Tonight	no weekday shows	11am 12:30pm 2pm 3:30pm

Members, please exchange your Planetarium passes for a ticket at the Planetarium Box Office before the show. If you have a child under 6 years old with you, please ask the cashier for a "Child's Pass". For recorded information about Sky Shows, Laserium, and Night Sky Information, please call (415) 750-7141. To reach the Planetarium Office, please call (415) 750-7127 during business hours.

All Sky Shows are between 35 and 45 minutes long. Theater doors open 15 minutes before the show begins.

On Our Cover

Sunday in the Park at the Steinhart: San Franciscans enjoyed the newly opened Steinhart Aquarium in 1923. In honor of the Steinhart's 75 years, Academy Chair of Aquatic Biology John McCosker has written *The History of Steinhart Aquarium: A Very Fishy Tale*. For more information, please see page 6. Photo: Courtesy of Special Collections/CAS Library

Camp Academy Summer Fun

Children and teachers alike are having a great summer at Camp Academy: behind the scenes at the Academy, in the classroom, in Golden Gate Park, up at Pepperwood Ranch, out at the beaches and mudflats of Bodega Bay and up in the soaring peaks of the Sierra Nevada.

Look for our Fall/Winter catalog in your mailbox in September.

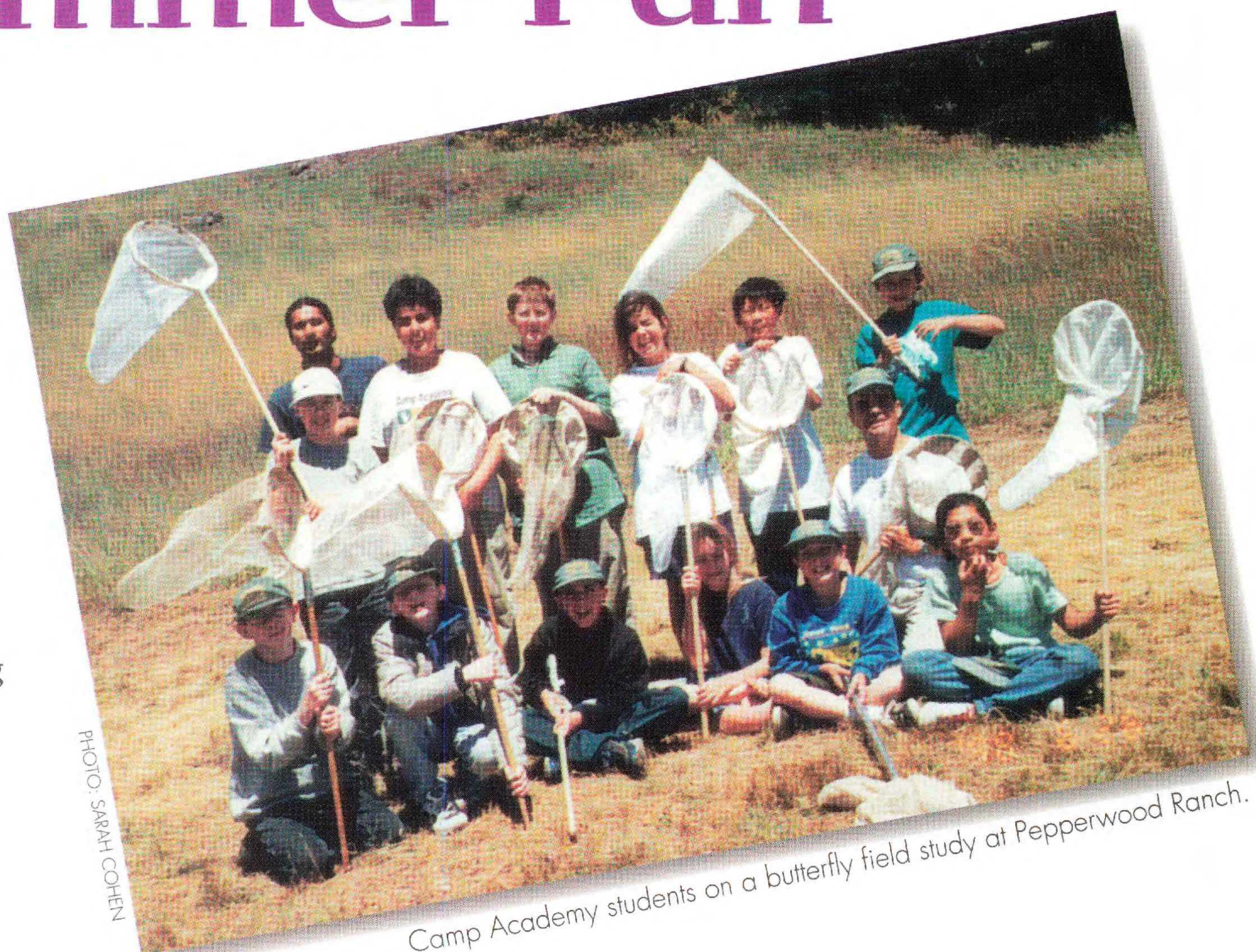


PHOTO: SARAH COHEN

Camp Academy students on a butterfly field study at Pepperwood Ranch.

Outstanding Volunteers



PHOTO: DONG LIN

One might conclude from this picture that Ron Dammann has his head in the stars, and not be far off. Some of his earliest childhood memories involve a fascination with celestial bodies; and he had his first refracting telescope when he was still a small boy. Although his education was mainly in the field of electronics, his work today involves research in the aerospace industry such as simulations of the reaction of materials in space environments; and in the field of cryogenics, building specialized storage tanks for frozen gases. He looks forward, in a year or two, to the launch of the Gravity Probe B, a joint project with Stanford University designed to test Einstein's Theory of Relativity.

Ron began coming to the Morrison Planetarium in 1966, shortly after he arrived here from the Chicago area, but it wasn't until 1995 during a visit with his family that he met Planetarium Technician John Weight in Earth and Space Hall, and inquired about the possibility of volunteering. He now helps John keep the Planetarium machines running; builds new projectors and special effects; assists with the installation of each new show and maintains and improves the equipment at Hume Observatory at Pepperwood. His ongoing goal is to make the Planetarium's images of the planets brighter, and to improve their motion.

Ron also is a member and recent president of the Fremont Peak Observatory Association at the State Park near San Juan Baptista, a volunteer organization which sponsored a successful fund-raising project to acquire a 30" reflecting telescope, used to present public programs.

Order Form

YOUR NAME:

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City

State

Zip

Member #

ADULT & FAMILY EDUCATION

Qty/Members

Qty/Non-members

Total

Limantour Natural Area

Field Trip:August 28

California's Complex Composites

Lectures:September 8,22,29

Field Trip:September 19,26

Biological Illustration

August 8,15,22

Family Hike at Pepperwood

September 18

Adult

Children

Hopi Kachinas

September 16,23,30

Sea Otters and Kelp Beds

Field Trip:September 5 or 6

LECTURES

Qty/Members

Qty/Non-members

Total

Changing Views of Human Evolution

2.5 Million Years/Human Evolution

B. DEAN LECTURES

Quantity

Total

Envisioning the Solar System

Living at Ground Zero

STEINHART ANNIVERSARY BOOK

Member

Total

The History of Steinhart Aquarium: A Very Fishy Tale

through September 15

after September 15

WATTIS SYMPOSIUM

October 2

Qty/Members

Qty/Non-members

Students

Total

October 2

X\$40

X\$50

X\$20

=

JUNIOR ACADEMY

Please call (415) 750-7100 for class catalog

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Please
take a moment....

Located in the fold of this newsletter you will find a postage-paid postcard, addressed to the Academy. The purpose of the postcard is to solicit ideas and input from members on the types of programming (exhibits, lectures, classes, etc.) you'd like to see at the Academy in the future. Please take a moment and fill out the postcard and tell us what topics of natural history, astronomy or the aquatic world you suggest we address.

Thanks for helping us make the Academy serve you better.



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The Route of Cortes

January 13-22, 2000

with Dr. Richard Hansen, June Anderson and Wiggie Andrews

PHOTO: HIGH COUNTRY PASSAGE



Early Spanish drawing of Cortes & Montezuma

Travel along the route of Spanish explorer Hernan Cortes from the Mexican port city of Veracruz, near where Cortes landed in 1519, to Mexico City, ancient capital of the Aztec empire and site of the Spanish conquest in 1521. This custom-designed itinerary includes beautiful colonial towns as well as the charming cosmopolitan cities of Veracruz and

PHOTO: JAMES A. FOX



Maya mural at Cacaxtla

Puebla. Explore some of Mexico's most outstanding archaeological sites with Dr. Hansen, many featuring exciting new finds. A highlight is Cacaxtla, where extraordinarily vivid ancient murals were recently discovered. Enjoy private evening events showcasing Mexican arts and crafts, and sample the best of Mexican regional dishes. Along with Dr. Hansen you will be accompanied once again by Wiggie Andrews. Completing an unbeatable team will be June Anderson from the Academy's anthropology department, whose expertise is in folk art and textiles.

Cost: \$3,350 per person (based on double occupancy) plus airfare of \$559 from San Francisco

Among the Great Whales aboard the Sea Lion

January 29-February 6, 2000

with Mike Boyle

Where on earth could you be surrounded by gentle gray whales, admire gorgeous desert flowers, snorkel with sea lions and watch the sun set behind a spectacular mountain range—all in one day? In Baja California's whale lagoons and the Sea of Cortes—one of the most exciting, unspoiled and

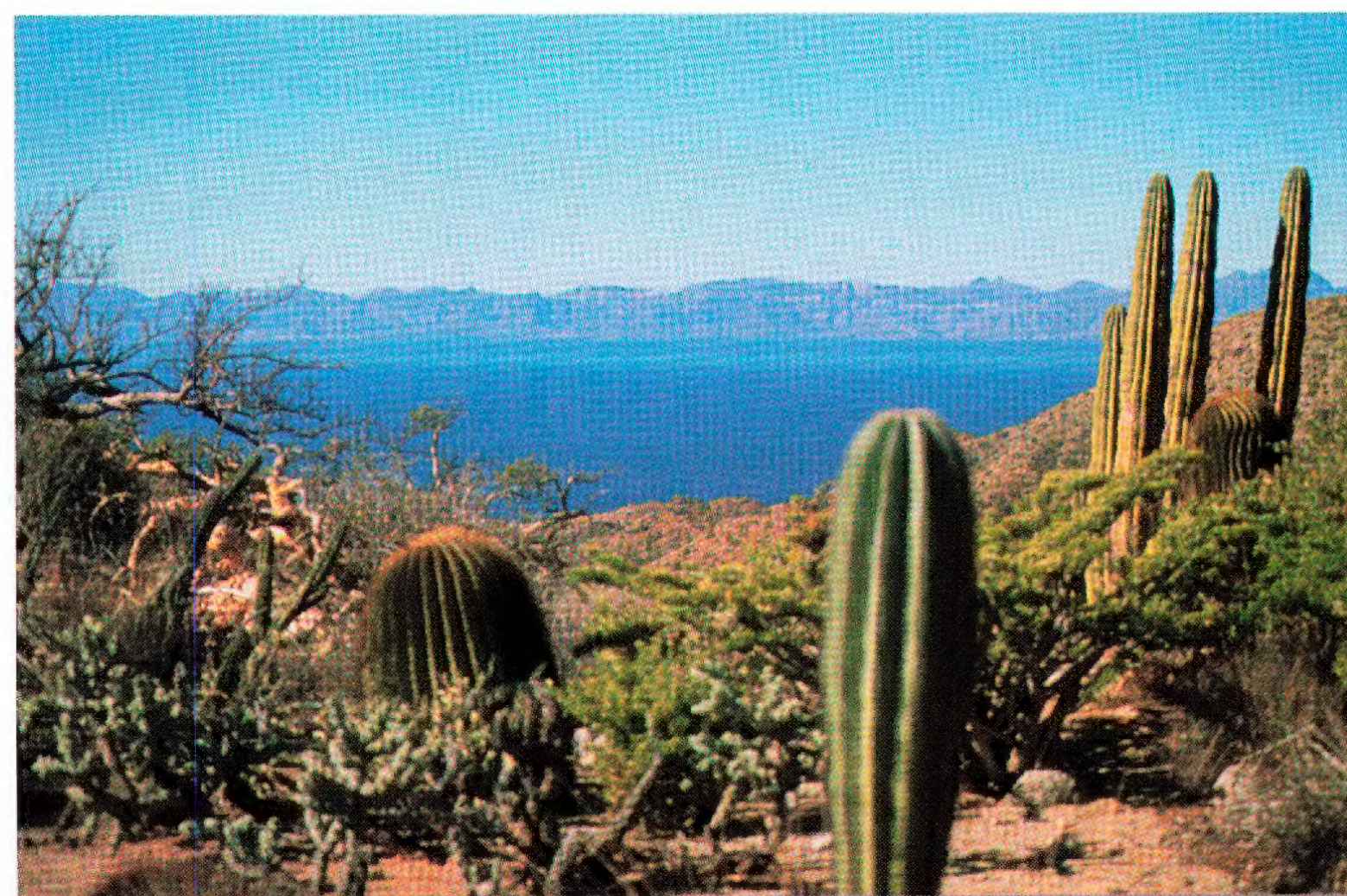


PHOTO: DAVID WHITE

Baja landscape

relatively untraveled parts of the world. The spectacle of the great whales, the exceptional marine and bird life and the arrays of enormous cacti all make for an exhilarating experience. Join fellow Academy travelers in watching these gentle giants in their breeding grounds in these protected lagoons after their migration from the Arctic waters of Alaska.

Cost: \$2,990-\$4,430 per person (based on double occupancy) + air



PHOTO: DAVID WHITE

Pacific W. S. Dolphins

For further information on these fascinating and exciting trips, please call Kathie Harvey in the Academy Travel Office at (800) 853-9372.

August

3 Tuesday

Fire Masters, 2-2:30 p.m. (p. 3)

Envisioning the Solar System
7:30 pm (B. Dean, p. 9)

4 Wednesday

Tales of the Ashanti
11:30 am and 1:30 pm (p. 11)

5 Thursday

Changing Views of Human
Evolution, 7 pm (p.9)

7 Saturday

Bee-Keeping
1 pm (Trad. Arts, p. 11)

8 Sunday

Biological Illustration
9:30 am - 4:30 pm
(Adult Ed., p. 8)

11 Wednesday

The Skin and Bones of Human
Evolution
2 & 7:30 pm (p.6)

14 Saturday

Cave Paintings
11-1pm, 2-4 pm (p.3)

Norwegian Rosemaling
1pm (Trad. Arts, p. 11)

15 Sunday

Biological Illustration
9:30 am - 4:30 pm
(Adult Ed., p. 8)

18 Wednesday

Cave Paintings
11-1pm, 2-4 pm (p. 3)

19 Thursday

2.5 Million Years of Human
Evolution, 7 pm (p.9)

21 Saturday

Twisting Plant Fibers
11-2 pm, (p. 3)

The History and Practice of
Archery
1 pm (Trad. Arts, p. 11)

22 Sunday

Twisting Plant Fibers
11-2 pm, 2:30 - 4:30 pm
(p. 3)

Biological Illustration
9:30 am - 4:30 pm
(Adult Ed., p. 8)

28 Saturday

Fire Masters, 3-3:30 pm

Primitive Weapons
11am - 2 pm, 2:30 - 4:30
pm (p. 3)

Limantour Natural Area
Field Trip
9 am-2 pm (Adult Ed., p. 8)

Wine Making
1 pm (Trad. Arts, p. 11)

29 Sunday

Stone Age Clothing
11am-2 pm, 2:30 - 4:30 pm

Fire Masters, 2-2:30 pm (p.3)

September

5 Sunday

Sea Otters and Kelp Beds
Field Trip, 9 am - 2:30 pm
(Adult Ed., p. 9)

6 Monday

Missing Links - Alive! Closes

Sea Otters and Kelp Beds
See Sept. 5

8 Wednesday

An Affair with Africa
2 & 7:30 pm (p.6)

California's Complex Composites
7-9 pm (Adult Ed., p.8)

11 Saturday

Harps, Songs and Stories of
the Middle Ages
1 pm (Trad. Arts, p. 11)

14 Tuesday

Living at Ground Zero
7:30 pm (B. Dean, p. 10)

15 Wednesday

The History of Steinhart
Aquarium: A Very Fishy Tale
2 & 7:30 pm (p.6)

16 Thursday

Hopi Kachinas
7-9 pm (Adult Ed., p. 8)

18 Saturday

Just for Members' Kids
9:30 am (p. 6)

Family Hike at Pepperwood
Field Trip,
10:30 am-1:30 pm
(Adult Ed., p.8)

Japanese Braiding, 11am-12 pm
(Trad. Arts, p. 11)

Scottish Fiddle Music
1 pm (Trad. Arts, p. 11)

19 Sunday

California's Complex Composites
Field Trip (Adult Ed., p.8)

22 Wednesday

California's Complex Composites
7-9 pm (Adult Ed., p.8)

23 Thursday

Hopi Kachinas
7-9 pm (Adult Ed., p. 8)

25 Saturday

Latin Cinema
1 & 3 pm (Trad. Arts, p. 11)

26 Sunday

California's Complex Composites
Field Trip (Adult Ed., p.8)

29 Wednesday

California's Complex Composites
7-9 pm (Adult Ed., p.8)

30 Thursday

Hopi Kachinas
7-9 pm (Adult Ed., p. 8)

VISITOR INFORMATION

Special Exhibitions:

The Elkus Collection
ongoing

Missing Links—Alive!
through September 6

EARTHQUAKE
permanent exhibit

The Artist's Universe II
through October 10

Witness
ongoing

Feeding Times:
Fish Roundabout, 1:30 pm
Penguins, 11:30 am & 4 pm

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